

IN THE CLAIMS

- 1 X. A method of chemical vapor deposition on a substrate comprising:
- 2 a) placing a substrate on a carrier and in a deposition chamber;
- 3 b) rotating said substrate;
- 4 c) heating said substrate, said heating applied to create a temperature
- 5 gradient above a deposition surface of said substrate wherein the
- 6 temperature increases with increasing distance from said deposition
- 7 surface; and
- 8 d) providing a flow of process gas across a surface of said substrate.

2 2. A method as recited in claim 1 wherein said heating brings said substrate to a
temperature to cause chemical vapor deposition.

3 3. A method as recited in claim 1 wherein said heating is accomplished with a first
heater radiating toward said deposition surface, and with a second heater radiating toward a back
surface of said substrate.

4 4. A method as recited in claim 3 wherein said first heater radiates a different
amount of heat energy than said second heater.

1 5. A method as recited in claim 4 wherein said heating includes a first thermal plate
2 between said first heater and said substrate, and a second thermal plate between said second
3 heater and said substrate.

1 6. A method as recited in claim 5 wherein said temperature gradient includes a
2 temperature difference in the range of 100°C to 200°C between said first plate and said second
3 plate.

1 7. A method as recited in claim 1 wherein said providing includes supplying said
2 process gas at a flow rate in the range of 200 sccm to 800 sccm.

1 8. A method as recited in claim 1 wherein said providing includes passing said
2 process gas over said substrate at a gas velocity in excess of 100 cm/sec.

1 9. A method as recited in claim 1 wherein said providing includes injecting said
2 process gas at said surface of said wafer with gas injectors so as to concentrate said gas at said
3 surface.

1 10. A method as recited in claim 9 wherein said gas injectors are temperature
2 controlled.

1 11. A method as recited in claim 9 wherein said gas injectors are directed at said
2 deposition surface.

1 12. A method as recited in claim 1 wherein said temperature gradient has a magnitude
2 in the range of 50 to 100° C per inch.